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ECONOMIC COMMISSION FOR ASIA AND THE FAR-EAST

CAMBODIA, LAOS, THAILAND AND VIET-NAM

Committee for Coordination of Investigations
of the Lower Mekong Basin
Seventeenth Session
March, 1962
Tokyo - Japan

PLAN OF OPERATION

THE PREK THNOT PRELIMINARY INVESTIGATIONS PROJECT

FOR IRRIGATION AND DRAINAGE

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I. INTRODUCTION

1. At the Sixteenth Session of the Committee for Coordination of Investigations of the Lower Mekong Basin (hereinafter referred to as the "Committee") which was held at Phnom Penh on 3-8 January 1962, the Committee and the representatives of Japan signed a Plan of Operation for the Japanese work of planning the dam and hydroelectric generation and transmission aspects of the Prek Thnot tributary project in Cambodia. The scope of work to be performed by Japan is shown in Appendix I attached to this document.

2. The above Plan of Operation does not cover the irrigation survey and planning which would be required for the preparation of a "Comprehensive" Project report. Only on the satisfactory completion of the irrigation survey and planning that the combined results will be adequate for the commencement of financial negotiations to be undertaken.

3. In the meantime, the Government of Israel indicated its willingness to undertake the irrigation planning of the Prek Thnot Project. At the Sixteenth Session, the Committee heard with pleasure the statement of the Representative of Israel concerning the encouraging findings of the Israel reconnaissance visit in November of Mr. Paul Doron with reference to the design of the irrigation aspects of the Prek Thnot Project, provided suitable contour maps of the area could be provided to them.

4. The Government of Cambodia undertook at the same session in principle to carry out the required mapping through its Service Geographique, under the leadership of Col. N. Kareth, Director General of the Service.

5. The present document sets forth a Plan of Operation for the investigations of the irrigation aspects of the Prek Thnot and the preparation of a Comprehensive Project Report to be undertaken by the Government of Israel in cooperation with the Government of Cambodia, the Government of Japan and the Committee.

/II. GENERAL

II. GENERAL DESCRIPTION OF THE PROJECT

6. The Prek Thnot, originating in the Cardamomes and Elephant ranges situated in southwest Cambodia, flows eastwards through Kompong Speu Plain and joins the Tonle Bassac to the south of Phnom Penh. During the dry season the Prek Thnot River runs almost dry and hence crops in the basin can only be grown in rain-fed fields in the rainy season.

7. The geographical proximity of the area to the capital city of the country renders an early development of the river basin particularly significant. The economic significance of the development of the river is considered to be comparable with that of the Stung Battambang Project.

8. The results of the reconnaissance survey undertaken under the Japanese contribution during the period from 1959 to 1960 indicate the feasibility of a multi-purpose dam project at a site slightly down the river from the confluence of the Prek Thnot and the Stung Ton Hou and about 20 km upstream from Kompong Speu. The catchment area at this side is about 3,660 km^2 and the estimated total annual run-off ranging from 0.85 to 2.5 billion m^3.

9. This reservoir will make it possible to irrigate about 100,000 ha of farmland throughout the year and also to generate about 5,000 kW of firm power with an installed capacity of 15,000 kW. It would also reduce flood discharge in the lower reaches. The power thus generated could be utilized for rural electrification and for irrigation and drainage pumps in the vicinity of Kompong Speu and in areas further downstream.

/III. PURPOSE

III. PURPOSE AND SCOPE OF WORK

10. The Project aims at collection of all necessary data regarding soils and crops of about 1500 sq. kilometres, irrigation and drainage planning and the preparation of a comprehensive Project Report, taking into consideration the work of the Japanese team on the dam and the powerplant detailed in Appendix I. This Comprehensive Report would summarize the results of studies on power and water uses and other socio-economic factors necessary for a feasibility report and would be in a form acceptable to a financial institution as an application for a development loan. The Israeli team will not cover contour mapping which would be required for the preparation of an irrigation and drainage plan and the particulars of which are set forth in Appendix II and which will be undertaken by the Government of Cambodia.

11. The scope of work to be performed by Israel would include:

(a) Study of contour maps of the irrigable area of the project of about 1500 km^2 on a scale of 1:20,000 with a view to select the most suitable area

(b) Soil dam and subsoil water survey arable for the area selected on the basis of the above maps

(c) Study of the types of crops, fertilizers and farming methods best suited to the prevalent soil and ground water conditions

(d) Preliminary designing of main irrigation and drainage systems, including main structures

(e) Cost estimates of irrigation and drainag systems

(f) Assessment of benefits from the Project

(g) Project evaluation and preparetion of Comprehensive Project Report suitable for application for loan for the project.

The Government of Israel estimates that its cost in this project, and hence the value of its contribution, will be approximately $148,000 equivalent.

/IV. PRIVIEGES,

IV. PRIVILEGES, IMMUNITIES AND FACILITIES

12. The ISRAELI members of the survey team (Appendix III) to be organized to carry out the present Project (hereinafter referred to as "the Team") shall be entitled to the following privileges and immunities:

(a) Immunity from legal process in respect of all acts performed by them in the execution of the Project;

(b) Immunity from national service obligations;

(c) Immunity from immigration restrictions;

(d) The privilege of bringing into the country reasonable amounts of foreign currency for the purpose of the Project or for personal use of such members, and of withdrawing any such amounts brought into the country, or in accordance with the relevant foreign exchange regulations, such amounts as may be earned thereon by such members in the execution of the Project;

(e) The same repatriation facilities in the event of international crises as diplomatic envoys; and

(f) Inviolability for all papers and documents relating to the Project.

13. The Government shall either exempt or bear the cost of any taxes, duties, fees or levies which may be imposed by it on the Team or its Israeli members in respect of:

(a) The salaries, wages or allowances earned by such members in the execution of the Project;

(b) Any equipment, materials and supplies brought into the country in connection with the Project or which after having been brought into the country, may be subsequently withdrawn therefrom; and

(c) Any property brought, including one privately owned automobile per person, by the Team or its members for their personal use or consumption or which, after having been brought into the country, may subsequently be withdrawn therefrom upon departure of such members. If despite this paragraph import duties are collected, then the Government making the collection shall make an equivalent cash payment to the Team or person concerned.

/14. The privileges

14. The privileges and immunities to which the Team and its personnel may be entitled may be waived by the Government of Israel, where in its opinion, such privileges and immunities would impede the course of justice and can be waived without prejudice to the successful completion of the Project or to the interest of the Team.

15. In the preceding paragraphs of this Chapter, "the Government" refers to either one or more of the Governments of Cambodia, Laos, Thailand and Viet-Nam to which the respective paragraphs may become applicable in their context during the course of the execution of the Project. Similarly "the country" refers to either one or more of the territories of Cambodia, Laos, Thailand and Viet-Nam.

16. Subject to a separate arrangement the Committee shall take necessary measures to make available to the Team part of the petroleum and other mineral oils contributed by the Government of Iran.

17. The Government of Cambodia and the Committee shall take all necessary steps to make available to the Team, in due time for the execution of the Project, the data, materials and reports on collateral investigations and studies being carried out or proposed to be carried out in the future, including maps and aerial photographs.

18. The Government of Cambodia shall delegate one engineer and one administrative officer, primarily for the liaison purposes.

19. The Government of Cambodia shall make available to the Israeli Team a sum of 100,000 Riels to cover the services of:

(a) One driver;

(b) One cook;

(c) One labourer; and

(d) to pay rent for housing and office accommodations.

/20. The Government

20. The Government of Cambodia shall, if required, assist the Team in procuring the services of additional local employees.

21. The Government of Cambodia shall make available the jeep or a similar vehicle as and when required by the members of the Israel team during their visit to Cambodia, it being understood that adequate notice will be given on each occasion that such a vehicle will be requested.

V. COMPLETION OF THE PROJECT

22. It is anticipated that the Government of Cambodia will furnish contour maps to a scale of 1:20,000 for part of the area by the end of 1962 and for the entire area by the end of 1963. Subject to the availability of maps by the above dates, Government of Israel will complete the project by the end of 1964 in all respects, that is within about one year from the date the maps for the entire area are made available to Israel by Cambodia.

VI. REPORTS

23. The Government of Israel will submit to the Committee an initial report on the project two months after the commencement of the work, interim reports at the meetings of the Committee and a final report after the completion of the entire work covered by the Project.

APPENDIX I

WORK TO BE COVERED BY JAPAN

The project covers the following scope of work to be performed by Japan.

A. Project Investigation

(1) Review of the results of reconnaissance surveys undertaken under the Japanese contribution and confirmation of the feasibility of development with respect of irrigation, hydroelectric power, flood control, etc.

(2) Survey for planning of the work

(a) Levelling of about 100 km along the Prek Thnot and its main tributaries.

(b) Profile levelling of about 40 km along the proposed dam sites including the diversion weir site for irrigation and their alternatives.

(c) Spot levelling of about 50 km necessary for mapping of aerial photographs.

(3) Hydrographic investigation.

(a) Installation of an automatic recording rain-gage for long recording at a comparatively high spot in the basin, and of a non-recording rain-gage and an evaporation pan at the Travaux Publics, Kompong Speu. Observation of rainfall and evaporation.

(b) Stationing of a semi-permanent gaging staff at Kompong Speu and observations of water levels and discharges of the stream.

(4) Preliminary geological investigation at the storage dam and diversion weir site's, power house site; core boring and auger boring of about 200 m each.

(5) Preliminary agricultural investigation of the irrigable area including soil tests at ten points.

B. Mapping of aerial photographs of Reservoir Area and Dam Site

(1) Topographic map covering an area of 20 km^2 at the storage dam site and diversion weir site at a scale of 1:5,000 with 2.5 m contours on the basis of the results of levelling and profile levelling.

(2) Topographic map at a scale of 1:20,000 with 5 m contours, covering the reservoir area of 590 km^2.

/C. Preparation

C. Preparation of Project Report

1. Project planning

(a) Study of hydrologic and other data; compilation and analysis of hydrologic and hydrometeorologic data.

i) Study of river diversion during the construction period.

ii) Study of evaporation and sedimentation.

iii) Determination of the height and type of the storage dam and diversion weir.

iv) Geological mapping of selected storage dam site and geological study of the reservoir area.

(b) Study of hydroelectric power.

i) Study of present power demand and future load growth of the affected area including industrial and agricultural use and rural electrification. Determination of the installed capacity of the plant with due consideration to the present and the future operation for power generation, irrigation and flood control.

(c) Irrigation. Preliminary planning of main irrigation and drainage canal system, on the basis of existing 1:100,000 maps.

2. Project design*, estimation of construction cost and project evaluation.

(a) Design of storage dam and diversion weir for irrigation, and appurtenant structures. Preliminary design of power house. Selection of type and rating of turbines and generators and their accessories. Preliminary design of switchyard, transmission system and substations.

(b) Preparation of construction schedules.

(c) Rough estimation of construction cost of the project broken down into annual fund requirements both in local and foreign currencies.

(d) Rough assessment of benefits to be derived from the project.

(e) Preparation of a project report.

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* Does not include detailed construction design

APPENDIX II

SCOPE OF WORK TO BE COVERED BY CAMBODIA

In order to enable the Government of Israel to prepare irrigation and drainage plans of the area, which can be irrigated by the Prek Thnot Project, the Government of Cambodia undertakes to prepare contour maps of the irrigable area of about 1,500 km^2 at a scale of 1:20.000 with 1 m contours, including the ground control survey work required for that purpose. On these maps, contours at 1/2 meter intervals will be interpoled.

The Government of Cambodia will place at the disposal of Service Geographique U.S.$ 8,000 for the purchase of necessary materials for aerial photography and additional levelling instruments.

Service Geographique of Cambodia undertakes to complete the work by the end of 1963.

APPENDIX III

COMPOSITION OF THE ISRAEL MEMBERS OF SURVEY TEAM

1. Project Manager
2. Irrigation and drainage engineer
3. Agricultural planner
4. Agricultural economist
5. Soil scientist
6. Soil technician

VII. SIGNATURES

Agreed, on behalf of the Parties, by the undersigned:

Date: Tokyo. 25 Mar. 1962 — Phlek Chhat
For Government of Cambodia

Date: Tokyo. 25 Mar. 1962 — Phoungkeoh Phanareth
For Government of Laos

Date: Tokyo. 25 Mar. 1962 — Boonrod Binson
For Government of Thailand

Date: Tokyo. 25 Mar. 1962 — Pham-Minh-Duong
For Government of the Republic of Viet-Nam

Date: Bangkok. 10 Apr. 1962 — Mordecai Kidron
For Government of Israel

Date: Tokyo. 25 Mar. 1962 — C. Hart Schaaf
Executive Agent of the Committee for Coordination of Investigations of the Lower Mekong Basin